CLAIMS

1. A composition for controlling viability of a tissue including:

a potassium channel opener or adenosine receptor agonist;

a compound for inducing local anaesthesia; and

a compound for reducing the uptake of water by a cell in the tissue.

2. A composition according to claim 1 wherein the compound for reducing the uptake of water by a cell is selected from the group consisting of: sucrose, pentastarch, hydroxyethyl starch, raffinose, mannitol, gluconate, lactobionate, polyethylene glycol (PEG) Dextran-60, and Dextran-40.

3. A composition according to claim 2 wherein the compound is sucrose.

4. A composition according to claim 2 wherein the concentration of the compound is between about 5 to 500mM.

5. A composition for controlling viability of a tissue including:

a potassium channel opener or adenosine receptor agonist;

a compound for inducing local anaesthesia; and

diazoxide.

6. A composition according to claim 5 wherein the concentration of diazoxide is between about 1 to 200 uM.

7. A composition for controlling viability of a tissue including:

a potassium channel opener or adenosine receptor agonist;

a compound for inducing local anaesthesia; and

a compound for inhibiting transport of sodium and hydrogen ions across a plasma membrane of a cell in the tissue.

8. A composition according to claim 7 wherein the compound for inhibiting transport of sodium and hydrogen ions is selected from the group consisting of: N-amidino-3,5-diamino-6-chloropyrzine-2-carboximide hydrochloride dihydrate, EIPA, cariporide (HOE - 642), eniporide, Triamterene, EMD 84021, EMD 94309, EMD 96785, EMD 85131, HOE 694, B11 B-513 and T-162559.

9. A composition according to claim 8 wherein the compound is N-amidino-3,5-diamino-6-chloropyrzine-2-carboximide hydrochloride dihydrate.

10. A composition according to claim 8 wherein the concentration of the compound is between about 1nM to 1mM.

11. A composition for controlling viability of a tissue including:

a potassium channel opener or adenosine receptor agonist;

a compound for inducing local anaesthesia; and

an antioxidant.

12. A composition according to claim 11 wherein the antioxidant is selected from the group consisting of: allopurinol, carnosine, Coenzyme Q 10, n-acetyl-cysteine, superoxide dismutase (SOD), glutathione reductase (GR), glutathione peroxidase (GP), catalase and the other metalloenzymes, glutathione, U-74006F, vitamin E, Trolox (soluble form of vitamin E), Vitamin C, Beta-Carotene (plant form of vitamin A), selenium, Gamma Linoleic Acid (GLA), alpha-lipoic acid, uric acid (urate), curcumin, bilirubin, proanthocyanidins, epigallocatechin gallate, Lutein, lycopene, bioflavonoids, polyphenols, trolox(R), dimethylthiourea, tempol(R), tocopherol, ascorbic acid, carotenoids, coenzyme Q, melatonin, flavonoids, polyphenols, aminoindoles , probucol, nitecapone, 21-aminosteroids, lazaroids, sulphydryl-containing compounds, ACE inhibitors, beta-mercaptopropionylglycine, 0-phenanthroline, dithiocarbamate, selegilize, desferrioxamine (Desferal), 5'-5-dimethyl-1-pyrrolione-N-oxide (DMPO) and (a-4-pyridyl-1-oxide)-N-t-butylnitrone (POBN).

13. A composition according to claim 12, wherein the antioxidant is allopurinol.

14. A composition according to claim 12, wherein the concentration of the antioxidant is between about 1nM to 100uM.

15. A composition for controlling viability of a tissue including:

a potassium channel opener or adenosine receptor agonist;

a compound for inducing local anaesthesia;

a source of magnesium in an amount for increasing the amount of magnesium in a cell in the tissue; and

a source of calcium in an amount for decreasing the amount of calcium within a cell in the tissue.

16. A composition according to claim 15 wherein the concentration of magnesium in the composition is between 0.5mM to 20mM.

17. A composition according to claim 15 wherein the concentration of calcium in the composition is between about 0.1mM to 2.5mM.

18. A method of controlling the viability of a tissue including the step of contacting the tissue with a composition according to any one of claims 1, 5, 7, 11 and 15.

19. A method according to claim 18 wherein the composition is treated to oxygenate the composition prior to or while the composition is in contact with the tissue.

20. A method according to claim 18 wherein the tissue is contacted by continuous perfusion of the composition the composition being at a temperature of about 10°C.

21. A method for arresting a tissue including the step of contacting the tissue with a composition according to any one of claims 1, 5, 7, 11 and 15.

22. A method for preserving a tissue including the step of contacting the tissue with a composition according to any one of claims 1, 5, 7, 11 and 15.

23. A method for protecting a tissue including the step of contacting the tissue with a composition according to any one of claims 1, 5, 7, 11 and 15.

24. A use of a composition according to any one of claims 1, 5, 7, 11 and 15 for the manufacture of a medicament for controlling the viability of a tissue.

25. A tissue preserved by the method according to claim 22.

29. A tissue according to claim 25, wherein the tissue is heart tissue.